

# Jefferson River Drought Management Plan



Jefferson River at Silver Star, MT - August 2, 2021 (~240 cfs)

*This Drought Management Plan guides efforts to reduce resource impacts and support equitable water use during critical periods. It is a voluntary effort involving agricultural producers, conservation groups, anglers, municipalities, businesses, and government agencies. Established in 2000, the plan focuses on maintaining a minimum flow of **50 cfs** at the [Jefferson River at Parsons Bdg nr Silver Star, MT - USGS-06027600](#) gage near Waterloo. The drought plan has been integral to keeping enough water in the river to keep riffles connected and avoid an ecological collapse. Prior to its development, the river experienced severe dewatering during dry years, with flows below 5 cfs recorded in 1988 by the USGS.*

# Drought Management Plan Triggers

<p><b>600 cfs</b> at <a href="#">Jefferson River near Twin Bridges, MT</a> - <a href="#">USGS-06026500</a></p>	<p>The 600 cfs flow trigger at the Twin Bridges USGS gage indicates declining flow conditions and represents a threshold for increased awareness. At this level, voluntary conservation measures are requested and angler awareness of stress to fish associated with low flows and elevated water temperatures is encouraged. A press release will be issued to notify the public of low flow conditions.</p>
<p><b>280 cfs</b> at <a href="#">Jefferson River near Twin Bridges, MT</a> - <a href="#">USGS-06026500</a></p>	<p>The 280 cfs flow trigger at the Twin Bridges USGS gage indicates critically low flow conditions. At this level, Montana Fish, Wildlife &amp; Parks may evaluate the need for a fishing closure on the Jefferson River.</p> <p>Voluntary reductions in irrigation and municipal water use are requested and coordinated by the Jefferson River Watershed Council. This includes communication with irrigators regarding ditch withdrawals and current conditions, with the objective of maintaining a minimum flow of <u>50 cfs</u> at the <a href="#">Waterloo USGS gage</a>.</p> <p>Any closure will remain in effect until flows exceed 300 cfs for seven consecutive days or until conditions allow Montana Fish, Wildlife and Parks to open the river based on weather and temperature forecasts.</p>
<p><b>68°F</b> at <a href="#">Jefferson River near Twin Bridges, MT</a> - <a href="#">USGS-06026500</a></p>	<p>Rising water temperatures place increasing thermal stress on the Jefferson River fishery. As temperatures rise, anglers are encouraged to fish during cooler morning hours and give the river a rest during the heat of the day. When maximum daily water temperature reaches or exceeds 68°F, voluntary conservation measures are requested.</p>
<p><b>73°F</b> at <a href="#">Jefferson River near Twin Bridges, MT</a> - <a href="#">USGS-06026500</a></p>	<p>When maximum daily water temperature reaches or exceeds 73°F for three consecutive days, Montana Fish, Wildlife &amp; Parks may implement Hoot-Owl fishing restrictions on the Jefferson River between 2:00PM and 12:00AM. Lifting of temperature related restrictions will be determined by Montana Fish, Wildlife &amp; Parks based on improving conditions.</p>

# Drought Mitigation Projects

## **Parsons Slough and Willow Spring Creek**

Parsons Slough and Willow Spring Creek, just downstream of the Parsons Bridge USGS gage near Waterloo, are spring-fed tributaries that provide critical cold water inputs to the Jefferson River and sustain late-season baseflow during drought conditions. Together, they help stabilize flows and reduce thermal stress in the mainstem, directly supporting the Jefferson River fishery. This project will focus on reconnecting the slough and spring creek to the Jefferson River to restore hydrologic function, improve drought resilience, and enhance habitat connectivity for wild fish. Achieving this will involve modifications to irrigation infrastructure and water rights to allow additional flow to remain instream, while redesigning the Parsons Slough channel to reestablish consistent streamflow.

## **Lower Boulder River Shaw Dam Removal and Riparian Restoration**

Located north of I-90 near Cardwell, MT, the Candlestick Ranch relies on the Shaw Diversion Dam and two smaller diversions to deliver water to 233 acres of cropland. The existing fish ladder on Shaw Dam frequently clogs with debris, making it inaccessible to migrating trout, and the aging infrastructure has become increasingly difficult to operate and regulate. This project will remove the diversion to address these infrastructure concerns while maintaining agricultural benefits and delivering significant ecological uplift to the Boulder and Jefferson Rivers through stream restoration, up to 8 cfs of colder Boulder River water returned to the system, and more than three acres of wetland development.

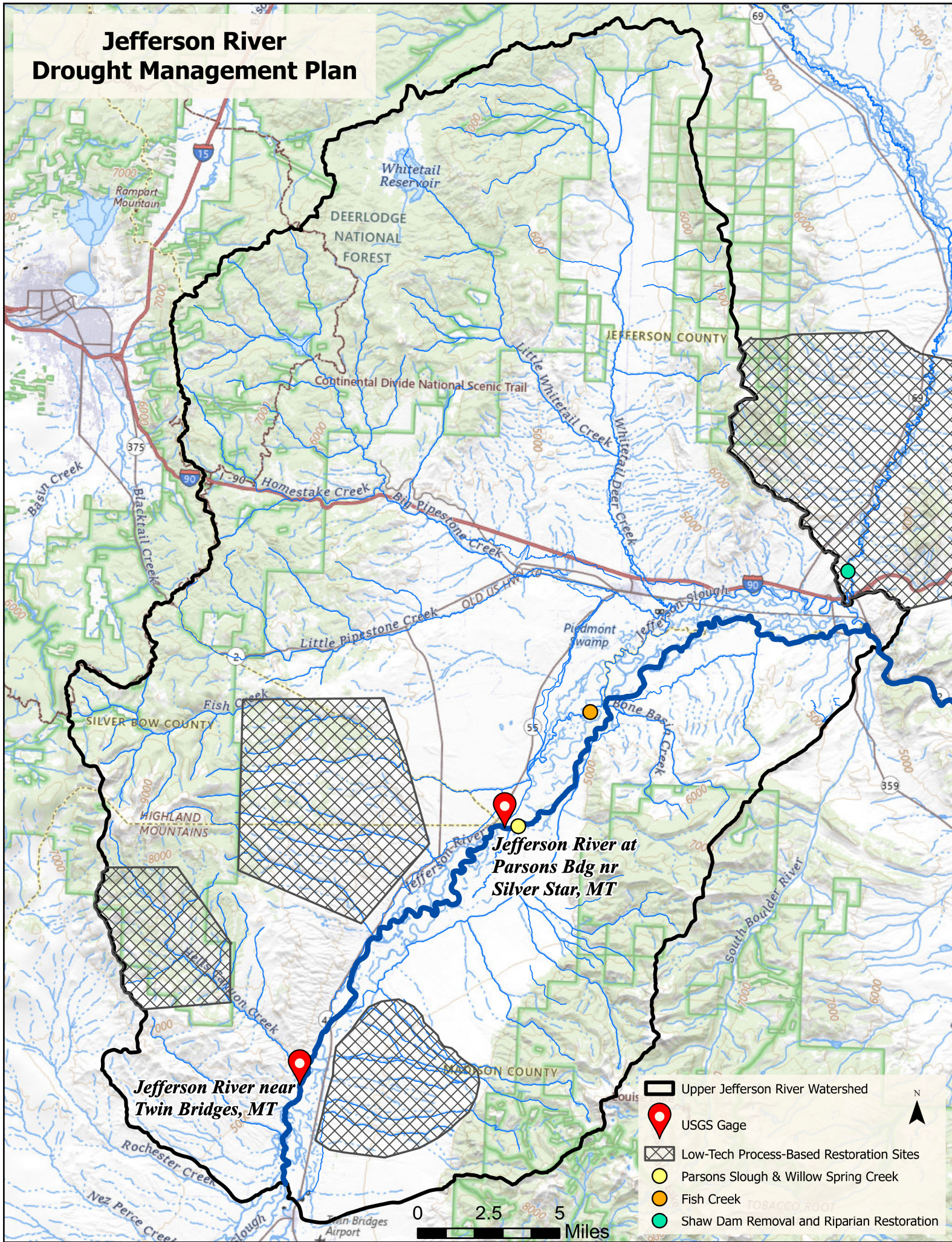
## **Fish Creek**

Fish Creek is largely disconnected from the Jefferson River, with much of the flow diverted into irrigation canals. These diversions and flow alterations create challenges for fish passage, water quality, and local landowners. The lower reaches of Fish Creek eventually enter Slaughterhouse Slough, however the flows, groundwater contributions, and fish use in this system are not well understood. This project will focus on evaluating the Fish Creek/Slaughterhouse Slough complex to identify opportunities to restore hydrologic connectivity, improve baseflow conditions, and strengthen drought resilience within the Upper Jefferson system.

## **Low-Tech Process-Based Restoration**

JRWC plans to pursue low-tech process-based restoration (LTPBR) projects within the Upper Jefferson Watershed to enhance groundwater retention, baseflow, and riparian health. Projects will focus on designing and permitting LTPBR sites in tributary or groundwater-influenced reaches where restoration potential and landowner interest are high. Candidate areas include the Tobacco Root Bench, Highlands Bench, Hells Canyon Creek Watershed, and the Lower Boulder Benches, all of which offer opportunities to improve hydrologic connectivity and cold water inputs to increase drought resilience.

# Jefferson River Drought Management Plan



**Jefferson River near  
Twin Bridges, MT**

**Jefferson River at  
Parsons Bdg nr  
Silver Star, MT**

- Upper Jefferson River Watershed
- USGS Gage
- Low-Tech Process-Based Restoration Sites
- Parsons Slough & Willow Spring Creek
- Fish Creek
- Shaw Dam Removal and Riparian Restoration

# Resources

[Jefferson River Watershed Council Website](#)

[Sign Up For Email Updates](#) - Receive updates on drought conditions, river flows, projects and other JRWC activities.

[Jefferson River Conditions](#) - Map of Jefferson River Watershed and current conditions.

[FWP Current Waterbody Restrictions](#) - Current fishing restrictions and closures.

[Montana Drought Monitor](#) - Current drought conditions and trends across Montana.

[Long Term Weather and Drought Forecast](#) - National Weather Service Climate Prediction Center provides forecasts and outlooks for short and long-term climate conditions.

[National Water and Climate Center](#) - A map that shows current snow water equivalent (SWE), precipitation, and streamflow conditions.

[Report of Reduced or Ceased Water Use Form](#) - To notify The Montana Department of Natural Resources and Conservation (DNRC) of reduced or ceased water use in compliance with a drought plan.

# Contact Information

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## Jefferson River Watershed Council (JRWC)

P.O. Box 550, Whitehall, MT 59759  
jeffersonriverwc.com



## Miranda Lane

Watershed Coordinator  
(406) 464-4086  
jeffersonriverwc@gmail.com

## Chris Edgington

Drought Management Plan Coordinator  
(406) 451-3035  
chris@montanatu.org

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## Montana Fish, Wildlife & Parks (FWP)



## Coltan Pipinich

Fisheries Biologist  
(406) 521-5798  
coltan.pipinich@mt.gov

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## Montana Department of Natural Resources and Conservation (DNRC)



## Evan Bilbrey

Hydrologist  
(406) 444-5178  
evan.bilbrey@mt.gov